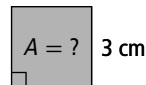


## Squares and Square Roots

You can think of the *square* of a number as the area of a square.



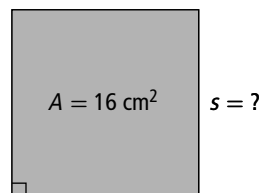
$$\begin{aligned} \text{Area is } 3^2 &= 3 \times 3 \\ &= 9 \end{aligned}$$

The area is  $9 \text{ cm}^2$ .

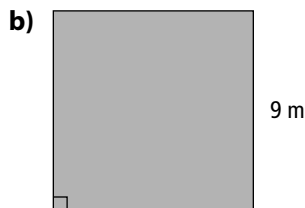
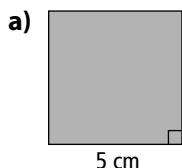
You can think of the *square root* of a number as the side length of a square.

$$\begin{aligned} s &= \sqrt{16} \\ &= 4 \end{aligned}$$

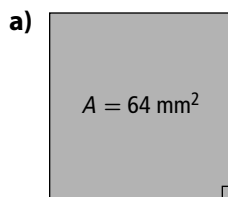
The side length is 4 cm.



1. What is the area of each square?



2. What is the side length of each square?



b) area of  $36 \text{ cm}^2$

## Substituting Into Formulas

A formula is a mathematical statement that shows the relationship between specific quantities. An example is  $C = 2\pi r$ , where  $C$  is the circumference and  $r$  is the radius of a circle.

What are the circumference and area of a circle with a radius of 10 cm?

Use 3.14 as an approximate value for  $\pi$ .

$$\begin{aligned} C &= 2\pi r \\ &= 2\pi(10) \\ &\approx 20(3.14) \\ &\approx 62.8 \end{aligned}$$

$$\begin{aligned} A &= \pi r^2 \\ &= \pi(10)^2 \\ &\approx 3.14(100) \\ &\approx 314 \end{aligned}$$

The circumference is approximately 62.8 cm. The area is approximately 314  $\text{cm}^2$ .

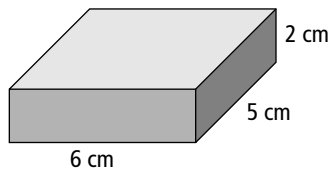
3. When a certain chemical is added to water, the water gets hotter. A formula for the water's temperature,  $t$ , in degrees Celsius, is  $t = 24 + 8m$ , where  $m$  is the amount of chemical added, in kilograms. Complete the following table of values for the missing values of  $m$  and  $t$ .

$m$ (kg)	0		5		9
$t$ (°C)		48		72	

### Volume and Surface Area

You can determine the volume,  $V$ , of a right prism using the formula  $V = Ah$ , where  $A$  is the area of the base and  $h$  is the height of the prism.

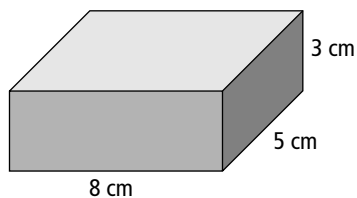
What is the volume of the rectangular prism?



The volume of the prism is  $60 \text{ cm}^3$ .

$$\begin{aligned} A &= (5)(6) \\ &= 30 \\ h &= 2 \\ V &= Ah \\ &= 30(2) \\ &= 60 \end{aligned}$$

4. Determine the volume of the rectangular prism.



5. Determine the volume of the triangular prism.

